

REMARKS

Claim Amendments

Claims 32-34, 37-39, 41, 43, 44, 46, 52 and 53-54 have been amended.

Claim 57 has been added.

Claims 33, 38 and 54 have been amended to replace the term “determined” with the term “characterized” to be consistent with the terminology used in the claims and to more particularly point out the claimed subject matter. Similarly, Claim 52 has been amended to replace the term “determining” with the term “characterizing.” Support for these amendments is found in the specification, for example, at page 57, line 29 to page 58, line 10.

Claim 54 has been amended to replace the term “effect” with “affect” to correct a typographical error. Support for this amendment to Claim 54 is found throughout the specification and in Claim 54 as originally filed.

Claims 32, 34, 37, 39, 41, 43 and 53 have been amended to contain the elements of the claims from which they originally depended, to depend from Claim 1, and to recite characterization of the phenotype.

Support for the amendment to Claim 32 is found in the specification, for example, at page 57, line 29 to page 58, line 10, and page 58, line 16 to page 59, line 5, and in the originally-filed Claims 1 and 31. Support for the amendment to Claim 34 is found in the specification, for example, at page 57, line 29 to page 58, line 10, and page 59, lines 6-15, and in the originally-filed Claim 1 and Claim 33. Support for the amendment to Claim 37 is found in the specification, for example, at page 57, line 29 to page 58, line 10, and page 59, lines 16-26, and in the originally-filed Claim 1, Claim 33, Claim 34 and Claim 35. Support for the amendment to Claim 39 is found in the specification, for example, at page 57, line 29 to page 58, line 10, and page 59, line 27 to page 60, line 14, and in the originally-filed Claim 1 and Claim 38. Support for the amendment to Claim 41 is found in the specification, for example, at page 57, line 29 to page 58, line 10, and page 60, lines 15-27, and in the originally-filed Claim 1 and Claim 40. Support for the amendment to Claim 43 is found in the specification, for example, at page 57,

line 29 to page 58, line 10, and page 60, line 28 to page 61, line 11, and in the originally-filed Claim 1 and Claim 42. Support for the amendment to Claim 53 is found throughout the specification and in the originally-filed Claim 1 and Claim 52.

Claims 44 and 46 have been amended to replace the phrase "metabolic phenotype profile" with the phrase "multi-determinant metabolic phenotype." Support for these amendments to Claims 44 and 46 is found in the specification, for example, page 60, line 24 to page 62, line 6.

Claim 52 has been amended to correct the word "phenotyping" with the word "phenotype". Support for this amendment can be found throughout the specification, for example, page 57, line 29 to page 58, line 10.

Claim 57 has been added to recite means for characterizing a multi-determinant metabolic phenotype. Support for this new claim is found throughout the specification and in the originally-filed Claims 1 and 44.

No new matter has been added by the amendments. Therefore, entry of this amendment into the present application is respectfully requested.

Provisional Election and Traversal of Restriction Requirement

Responsive to the Restriction Requirement dated March 8, 2004, the claims of Group I (Claims 1-30, 51 and 54-56), drawn to a method of characterizing a multi-determinant metabolic phenotype, are provisionally elected for prosecution. To the extent that Groups I-VI are separately grouped, Applicant traverses the Restriction Requirement and requests that these six groups be combined. In the alternative, Applicant requests that Claim 39 be joined with Group I. Applicant reserves the right to file a continuing application or take such other appropriate action as deemed necessary to protect the non-elected inventions. Applicant does not hereby abandon or waive any rights in the non-elected inventions.

Traversal of Restriction of Groups I-VI

Criteria for Restriction

The necessary criteria for a proper restriction requirement between patentably distinct inventions have been clearly defined. Each restriction must meet two separate requirements. These requirements reflect both the statutory basis for restriction under 35 U.S.C. § 121 and its discretionary nature. The criteria are, in relevant part, as follows:

- (A) The inventions must be independent or distinct as claimed; and
- (B) there must be a serious burden on the examiner if restriction is required.

The Manual of Patent Examining Procedure, 8th edition, February 2003 revision (“MPEP”), § 802.01 defines “independent” (*i.e.*, unrelated) as follows:

The term “independent” (*i.e.*, not dependent) means that there is no disclosed relationship between the two or more subjects disclosed, that is, they are unconnected in design, operation, or effect, for example: (1) species under a genus which species are not usable together as disclosed; or (2) process and apparatus incapable of being used in practicing the process.

The term “distinct” means that two or more subjects are related, but are capable of separate manufacture, use, or sale as claimed and are patentable over each other. (*Id.*) Where the inventions are related as a combination-subcombination, the inventions are only distinct if it can be shown that a combination as claimed:

- (A) does not require the particulars of the subcombination as claimed for patentability (to show novelty and nonobviousness), and
- (B) the subcombination can be shown to have utility either by itself or in other and different relations.

MPEP § 806.05(c).

The Restriction Requirement

The Examiner states that “inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects” and sets forth six Groups (I-VI) for restriction, on the grounds that the inventions of Groups I-V are patentably unrelated and distinct and Groups I-VI are patentably related but distinct. Applicant respectfully disagrees. Applicant respectfully requests that Groups II-VI be recombined with provisionally-elected Group I. Group I contains one independent claim, Claim 1, and dependent Claims 2-30, 51 and 54-56. Claim 1 is directed to a method of characterizing a multi-determinant phenotype, wherein a plurality of phenotypic determinants are identified as corresponding to respective metabolic characteristics, said method comprising:

- a) administering to an individual a probe substrate specific to a metabolic pathway of each of said plurality of phenotypic determinants;
- b) detecting metabolites of said metabolic pathways in a biological sample from said individual in response to said probe substrate; and
- c) characterizing respective phenotypic determinants of said multi-determinant metabolic phenotype based on detected metabolites.

Group I and Group II Should Be Rejoined

The inventions of Group I and Group II should be rejoined because they are dependent and related to each other. According to the Examiner, Group I is drawn to a method of characterizing a multi-determinant metabolic phenotype, wherein a plurality of phenotypic determinants are identified as corresponding to respective metabolic characteristics. This method is disclosed as being capable of use in the methods of Group II.

Group II contains Claims 31-37. Claims 32-34 and 37 have been amended. Claim 31 and Claim 33 are directed to methods of using a multi-determinant metabolic phenotype. As amended, Claim 32, Claim 34 and Claim 37 require that the multi-determinant metabolic

phenotype is characterized by the method of Claim 1. Therefore, Claim 1 and Claims 32, 34 and 37 are related as combination-subcombinations. Thus, there is a disclosed relationship between Group I and Group II; that is, they are connected in design, operation, and effect. Moreover, Groups I and II are both classified as Class 436, and, particularly as amended, a search and examination of the claims of Groups I and II can be made without serious burden on the Examiner.

Group I and Group III Should Be Rejoined

The inventions of Group I and Group III should be rejoined because they are dependent and related to each other. According to the Examiner, Group I is drawn to a method of characterizing a multi-determinant metabolic phenotype, wherein a plurality of phenotypic determinants are identified as corresponding to respective metabolic characteristics. This method is disclosed as being capable of use in the methods of Group III.

Group III contains Claims 38-39. Claim 38, as amended, is directed to characterizing a multi-determinant metabolic phenotype. As amended, Claim 39 requires that the multi-determinant metabolic phenotype is characterized by the method of Claim 1. Therefore, Claims 1 and Claim 38 and Claim 39 are related as combination-subcombinations. Thus, there is a disclosed relationship between Group I and Group III; that is, they are connected in design, operation, and effect. Moreover, a search and examination of the claims of Group I and III, particularly as amended, can be made without serious burden on the Examiner.

Group I and Group IV Should Be Rejoined

The inventions of Group I and Group IV should be rejoined because they are dependent and related to each other. According to the Examiner, Group I is drawn to a method of characterizing a multi-determinant metabolic phenotype, wherein a plurality of phenotypic determinants are identified as corresponding to respective metabolic characteristics. This method is disclosed as being capable of use in the methods of Group IV.

Group IV contains Claims 40-41. Claim 40 is directed to a method of selecting a

treatment for an individual by characterizing a multi-determinant phenotype. As amended, Claim 41 requires that the multi-determinant metabolic phenotype is characterized by the method of Claim 1. Therefore, Claim 1 and Claim 41 are related as combination-subcombination. Thus, there is a disclosed relationship between the Group I and Group IV; that is, they are connected in design, operation, and effect. Moreover, a search and examination of the claims of Group I and IV, particularly as amended, can be made without serious burden on the Examiner.

Group I and Group V Should Be Rejoined

The inventions of Group I and V should be rejoined because that are dependent and related to each other. It is noted that the Examiner on page 2 of the Restriction Requirement states that Group V contains "Claims 42-43, 52-5." Applicant believes the Examiner intends Group V to contain Claims 42-43 and 52-53 because Claim 53 depends on Claim 52 and Claim 53 has not been placed in another Group. According to the Examiner, Group I is drawn to a method of characterizing a multi-determinant metabolic phenotype, wherein a plurality of phenotypic determinants are identified as corresponding to respective metabolic characteristics in invention I. This method is disclosed as being capable of use in the methods of Group V.

Group V contains Claims 42-43 and 52-53. Claim 42 (step a) is directed to characterizing a multi-determinant metabolic phenotype. As amended, Claim 43 requires that the multi-determinant metabolic phenotype is characterized by the method of Claim 1, therefore, Claim 1 and Claim 43 are related as combination-subcombination.

Claim 52 is directed to a method of diagnosing a disease or condition associated with altered function in a drug metabolizing enzyme(s) by characterizing an individual's multi-determinant metabolic phenotype. As amended, Claim 53 requires that the multi-determinant metabolic phenotype is characterized by the method of Claim 1. Therefore, Claim 1 and Claim 53 are related as combination-subcombination. Thus, there is a disclosed relationship between Group I and Group V; that is, they are connected in design, operation and effect. Moreover, a search and examination of the claims of Group I and V, particularly as amended, can be made without serious burden on the Examiner.

Groups I-V and Group VI Should Be Rejoined

The Inventions of Groups I-V and Group VI are related as method and apparatus for its practice. (MPEP § 806.05(e)). Group VI contains Claims 44-50. As amended, Claims 44 and Claim 46 of Group VI are drawn to assay systems for detecting the presence of multiple determinant-specific metabolites. This assay system contains means to provide phenotypic determinants (step c), wherein said phenotypic determinants provide a multi-determinant metabolic phenotype.

Claim 57 has been added. Claim 57 is drawn to an assay system for characterizing a multi-determinant metabolic phenotype. The claim includes “means” for practicing the method of Claim 1. Therefore, Claim 57 is a linking claim and must be examined with the elected invention. (MPEP § 809.03).

There are a number of situations which arise in which an application has claims to two or more properly divisible inventions, so that a requirement to restrict the application to one would be proper, but presented in the same case are one or more claims (generally called “linking” claims) inseparable therefrom and thus linking together the inventions otherwise divisible. The most common types of linking claims which, if allowed, act to prevent restriction between inventions that can otherwise be shown to be divisible, and ...(C) a claim to a “means” for practicing a process linking proper apparatus and process claims....

MPEP § 809.03.

Thus the linking claim (Claim 57) links the claims of Groups I and VI and acts to prevent restriction between them.

Moreover, Group V and VI are of the same class (Class 422) and subclass (Subclass 119). A search and examination of Groups I-VI can be made without serious burden on the Examiner.

No Serious Burden of Search

All of the claims of Groups I-VI are classified in two subclasses of Classes 435 and 436 and one subclass of Class 422. More specifically, Groups I and II are the same class (Class 436), Group III and IV are of the same class (Class 435), and Group V and VI are of the same class (Class 422) and subclass (Subclass 119). A proper search for any one of the Groups would include a search of most or all of these five subclasses. Thus, searching all four of Groups I-VI will not impose an additional serious burden on the Examiner.

Summary

To the extent that Groups I-VI are separately grouped, Applicant respectfully traverses the Restriction Requirement and requests that these groups be combined. In the alternative, Applicant requests that Claim 39 be joined with Group I. In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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